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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,622

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Minoru Ohyama

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THE NATH LAW GROUP

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EXAMINER

FISCHER, MARK L

ART UNIT

PAPER NUMBER

2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,622	Applicant(s) OHYAMA, MINORU	
	Examiner MARK FISCHER	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figures 1, 2, and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 16 recites the limitations "the signal S2" in line 3 and "the signal S1" in line 4. Claim 17 recites the limitations "the polarity" in line 4, "the signal S1" in lines 9-10, and "the signal S2" in line 10. There is insufficient antecedent basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 14-18 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Shibuya (U.S. Pub. No. 2001/0053110 A1).

Regarding claim 14, Shibuya discloses an optical device for an optical pickup apparatus (Fig. 1) for recording or reproducing information with respect to an information recording medium, comprising: a substrate (surface of element 1); a hologram element (6) to diffract incident beams of first and second wavelengths (beams from 2 and 3) that are different from each other; a light receiving element arranged on the substrate and having a first light receiving region (4) to receive an incident beam of the first wavelength diffracted by the hologram element and a second light receiving region (5) to receive an incident beam of the second wavelength diffracted by the hologram element; and an operation unit (Fig. 2B, element 23) to find a difference between a signal (output of 20) from one of the first and second light receiving regions that receives an incident beam of one of the first and second wavelengths made incident to and diffracted by the hologram element and a signal (output of 21) from the other of the first and second light receiving regions that does not receive the incident beam of the one wavelength made incident to and diffracted by the hologram element and receives unnecessary light scattering over the substrate including the first and second light receiving regions (see Fig. 4A),

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and based on the found difference, remove a signal component representative of the unnecessary light from the signal from the one light receiving region (also see Fig. 4A).

Regarding claim 15, Shibuya discloses that the first light receiving region (4) and second light receiving region (5) have a nearly equal light receiving area (see Fig. 2A).

Regarding claim 16, Shibuya discloses that if the one wavelength is the first wavelength, the operation unit carries out an operation of $(S1-S2)$ to subtract the signal $S2$ of the second light receiving region from the signal $S1$ of the first light receiving region, and if the one wavelength is the second wavelength, carries out an operation of $(S2-S1)$ to subtract the signal $S1$ of the first light receiving region from the signal $S2$ of the second light receiving region (in Fig. 2B, elements 23 and 24 work together to carry out such an operation, also see ¶ [0044]).

Regarding claim 17, Shibuya discloses a determination means (25) for determining whether the wavelength of the incident beam is the first wavelength or the second wavelength; and polarity switching means (24) for inverting the polarity of an output signal from the operation means between a first polarity and a second polarity according to a result of determination made by the determination means (¶ [0044]), when the determination means determines that the incident beam is of the first wavelength, the polarity switching means switching the polarity of the output signal of the operation unit to the first polarity to provide an operation result of $(S1-S2)$ from the signal $S1$ of the first light receiving region and the signal $S2$ of the second light receiving region (¶ [0044]), when the determination means determines that the incident beam is of the second wavelength, the polarity switching means switching the polarity of the output signal of the operation unit to the second polarity to provide an operation

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result of $(-1) \times (S1 - S2)$ from the signal S1 of the first light receiving region and the signal S2 of the second light receiving region (¶ [0044]).

Regarding claim 18, Shibuya discloses that the incident beams of the first and second wavelengths that are different from each other are main beams emitted toward the information recording medium to detect information from the information recording medium (9) and reflected by the information recording medium (see Fig. 1); and the operation unit removes the signal component representative of the unnecessary light from the signal of the one light receiving region that receives the reflected main beam diffracted by the hologram element (see Fig. 4A).

Regarding claim 20, Shibuya discloses that the hologram element is divided into first and second regions having different diffraction axes (see Fig. 2A, element 6); and each of the first and second light receiving regions has a light receiving region to receive a diffracted beam from the first region of the hologram element and a light receiving region to receive a diffracted beam from the second region of the hologram element (see Fig. 2A).

Regarding claim 21, Shibuya discloses that the first wavelength is in a 650-nm band and the second wavelength is in a 780-nm band (¶ [0039]).

Regarding claim 22, Shibuya discloses that at least one of a first light source (2) for emitting light of the first wavelength and a second light source (3) for emitting light of the second wavelength is arranged on the substrate (Fig. 1, element 1).

Regarding claim 23, Shibuya discloses a first light source (2) for emitting light of the first wavelength; and a second light source (3) for emitting light of the second wavelength.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 19, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya in view of Fukakusa et al. (U.S. Pat. No. 6,556,533 B1).

Regarding claim 19, Shibuya discloses that the incident beams of the first and second wavelength that are different from each other are emitted toward the information recording medium (9) to carry out a tracking operation of a track on the information recording medium (see Fig. 2B) and reflected by the information recording medium; and the operation unit removes the signal component representative of the unnecessary light from the signal of the one light receiving region that receives the reflected beam diffracted by the hologram element (see Fig. 4A). Shibuya does not explicitly disclose that the incident beams are sub-beams. However, Fukakusa discloses the use of sub-beams for tracking control in a system. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the

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teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

Regarding claim 24, Shibuya does not explicitly disclose a first diffraction grating to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating arranged in the optical device, to divide light of the second wavelength from the second light source into a main beam and two sub-beams.

However, Fukakusa discloses a first diffraction grating (element 28 in Fig. 7 of element 1 in Fig. 1) to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating (element 28 in Fig. 7 of element 11 in Fig. 1) arranged in the optical device, to divide light of the second wavelength from the second light source into a main beam and two sub-beams. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

Regarding claim 25, Shibuya does not explicitly disclose a first diffraction grating arranged in the optical device, to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating to divide light of the second wavelength from the second light source into a main beam and two sub-beams.

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However, Fukakusa discloses a first diffraction grating (element 28 in Fig. 7 of element 1 in Fig. 1) arranged in the optical device, to divide light of the first wavelength from the first light source into a main beam and two sub-beams; and a second diffraction grating (element 28 in Fig. 7 of element 11 in Fig. 1) to divide light of the second wavelength from the second light source into a main beam and two sub-beams. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Shibuya with Fukakusa to implement the invention of Shibuya, but also to modify the beams of Shibuya to include sub-beams with the motivation to create tracking control with a sub-beam method in which the unnecessary light of sub-beams can be removed so that a better tracking signal using the sub-beam method can be obtained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK FISCHER whose telephone number is (571) 270-3549. The examiner can normally be reached on Monday-Friday from 9:00AM to 6:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Fischer/

Examiner, Art Unit 2627

2/27/2009

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627